



Module Specification

Quality Control Systems

Version: 2023-24, v2.0, 15 Mar 2023

Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	4
Part 4: Assessment.....	5
Part 5: Contributes towards	7

Part 1: Information

Module title: Quality Control Systems

Module code: UFMFXA-15-2

Level: Level 5

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Engineering Design & Mathematics

Partner institutions: None

Field: Engineering, Design and Mathematics

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Quality assurance and improvement processes are an essential element of a modern manufacturing environment, designing and planning and ensuring that projects, goods and services meet required standards and are fit for purpose.

In this module students are familiarised with the principles and use of quality control techniques, quality assurance issues and quality management methods such as

QA/QC, strategic total quality management (STQM) and Design for Six Sigma (DFSS).

Features: Not applicable

Educational aims: The aim of this module is to equip students with up-to-date methods for implementing quality control, quality assurance and quality management techniques within a modern manufacturing environment.

Outline syllabus: The importance of quality in design and planning, in the completed project and in the production of goods and services will be covered. These include:

Introduction to quality basics, definition of quality and major contributors to quality

Strategic Quality Management (STQM)

Designing Quality Into Products and Services (QFD, DFSS, FMEA and FTA)

Creativity in Quality

Quality Systems and QS Auditing (ISO9000)

Product, Process, and Materials Control

Quality Improvement Tools

Metrology, Inspection, Testing

Statistical Process Control and process capability

Design of Experiments, and analysis of variance using statistical software

Variable Control Charts and Control Charts for Attributes

Part 3: Teaching and learning methods

Teaching and learning methods: Scheduled learning: material will be delivered in whole cohort sessions and via on-line resources. The majority of the learning activities will take place on a combination of lectorials, discussion groups, case studies and 'hands on' use of tools and techniques that provide the practical knowledge to undertake a manufacturing setup evaluation and present improvement solutions.

Independent learning: includes hours engaged with essential reading, assignment preparation and completion etc.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Define the fundamental concepts of statistical process control, and process capability in detail

MO2 Identify and implement "widely-used" quality analysis tools and quality management problem-solving techniques

MO3 Evaluate the complexities of statistical analysis, software and control-chart interpretation and their work-place application

MO4 Analyse and diagnose problems causing variation in manufacturing and service industry processes

MO5 Assess Quality Control concepts and philosophies to construct strategies and resolve issues arising in industries

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://rl.talis.com/3/uwe/lists/F2A648E2-4DCF-A5E4-8318-4D11F8E0BC71.html?lang=en-GB&login=1) via the following link <https://rl.talis.com/3/uwe/lists/F2A648E2-4DCF-A5E4-8318-4D11F8E0BC71.html?lang=en-GB&login=1>

Part 4: Assessment

Assessment strategy: The main sit strategy will be as follows:

Assessment Task: The individual presentation and Q and A session are summative and assesses the students' understanding of Quality Control concepts and techniques and the rationales they have applied in the industrial scenario.

Assessment Task 2: The report is structured to verify students' competence and demonstrate understanding of the specific Quality Control tools and systems applied industrially. It also requires the students to demonstrate an ability to apply this to an industrial production scenario. The report will take the form of a Quality control audit and improvement document.

The resit strategy will be as follows:

Assessment Task: The individual presentation and Q and A session are summative and assesses the students' understanding of Quality Control concepts and techniques and the rationales they have applied in the industrial scenario (scenario modified from first sit).

Assessment Task 2: The report is structured to verify students' competence and demonstrate understanding of the specific Quality Control tools and systems applied industrially. It also requires the students to demonstrate an ability to apply this to an industrial production scenario. The report will take the form of a Quality control audit and improvement document (Previously completed coursework will not be included).

Assessment tasks:

Presentation (First Sit)

Description: Presentation and oral examination (12 mins presentation + 8 minutes of questions)

Weighting: 40 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4, MO5

Report (First Sit)

Description: Assessment Task 2

Quality investigation Project report (2000 words)

Weighting: 60 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Presentation (Resit)

Description: Presentation and oral examination (12 mins presentation + 8 minutes of questions)

Weighting: 40 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4, MO5

Report (Resit)

Description: Assessment Task 2:

Quality investigation Project report (2000 words)

Weighting: 60 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Mechanical Engineering with Manufacturing {Apprenticeship-UWE} [UCW] BEng (Hons) 2022-23

Mechanical Engineering with Manufacturing {Apprenticeship-UWE} [COBC] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Manufacturing) {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2021-22

Mechanical Engineering and Technology (Manufacturing) {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2021-22